

16  
CLAIMS

I claim:

1. A transfer switch adapted for interconnection between an auxiliary power source and an electrical load center associated with a building and interconnected in a series of building electrical circuits, comprising:

5 a power input for supplying power from the auxiliary power source to the transfer switch;

a series of single pole first switches, wherein each first switch is operable to control the supply of power from the power inlet to one of a series of first single pole building electrical circuits;

10 a series of single pole first circuit breakers, wherein each first circuit breaker is interconnected with one of the first switches;

at least one double pole second switch operable to control the supply of power from the power inlet to a second double pole electrical circuit; and

a double pole second circuit breaker interconnected with each second switch.

2. The transfer switch of claim 1, wherein the double pole second switch comprises a pair of interconnected single pole switches.

3. The transfer switch of claim 2, wherein each of the interconnected single pole switches includes a manually operable switch handle, and wherein the single pole switches are interconnected by connecting the handles together so that the handles are movable in unison.

4. The transfer switch of claim 2, further comprising a double pole main circuit breaker interconnected between the power inlet and each of the double pole second switches.

5. The transfer switch of claim 1, wherein each of a pair of the single pole first circuit breakers are removably mounted within a socket-type mounting arrangement associated with the transfer switch for electrically connecting each of the pair of single pole first circuit breakers with one of a pair of the first switches.

6. The transfer switch of claim 5, further comprising a connection arrangement for connecting together manually operable handles associated with the pair

of first switches so that the pair of first switches form a double pole second switch to control the supply of power to a second double pole circuit; a double pole circuit breaker  
 5 interconnected between the power inlet and the connected pair of first switches; and a connector member engaged with the socket-type mounting arrangement in place of the pair of single pole first circuit breakers for establishing an electrical path between the power inlet and the pair of interconnected first switches.

7. A transfer switch adapted for interconnection between an auxiliary power source and an electrical load center associated with a building and interconnected in a series of building electrical circuits, comprising:

a power input for supplying power from the auxiliary power source to the  
 5 transfer switch;

a series of single pole switches interconnected with the power inlet, wherein each single pole switch is adapted for connection to a single pole building electrical circuit for controlling the supply of power thereto;

a series of single pole circuit breakers, wherein each single pole circuit  
 10 breaker is interconnected with a building electrical circuit and one of the single pole switches; and

a double pole main circuit breaker located downstream of the power inlet and upstream of the single pole switches.

8. The transfer switch of claim 7, further comprising a double pole switch and a double pole branch circuit breaker located downstream of the double pole main circuit breaker and interconnected with a double pole building electrical circuit.

9. The transfer switch of claim 8, wherein the double pole switch comprises a pair of single pole switches, each of which has a manually operable switch handle, and wherein the switch handles are interconnected together for movement in unison.

10. The transfer switch of claim 9, wherein the pair of single pole switches are adapted to be used separately from each other, and further comprising an interchangeable mounting arrangement electrically interconnected with each of the pair of single pole switches, wherein the interchangeable mounting arrangement is adapted to  
 5 receive a pair of individual single pole circuit breakers when the pair of single pole

switches are used separately from each other, for providing circuit protection in each of a pair of individual single pole building electrical circuits; and

a connector member engageable with the interchangeable mounting arrangement for use when the pair of single pole switches are interconnected together, wherein the connector member includes a pair of conductors which establish an electrical path between the power inlet and the pair of single pole switches.

11. The transfer switch of claim 10, further comprising a double pole branch circuit breaker interconnected between the double pole main circuit breaker and the pair of interconnected single pole switches for providing double pole circuit protection when the pair of single pole switches are interconnected together to form a double pole switch.

12. The transfer switch of claim 10, wherein the interchangeable mounting arrangement defines a first mounting configuration compatible with the connector member, and wherein the series of single pole circuit breakers are arranged in a second configuration incompatible with the connector member for preventing engagement of the connector member with a mounting arrangement adapted to receive the series of single pole circuit breakers.

13. A transfer switch adapted for interconnection between an auxiliary power source and an electrical load center associated with a building and interconnected in a series of building electrical circuits, comprising:

a power input for supplying power from the auxiliary power source for inputting power to the transfer switch;

a plurality of first single pole switches, each of which is adapted for interconnection with a single pole building electrical circuit;

a plurality of single pole circuit breakers, each of which is interconnected with one of the single pole switches;

a pair of second single pole switches; and

an interchangeable mounting arrangement interconnected with the second single pole switches, wherein the interchangeable mounting arrangement is adapted to individually receive a pair of single pole circuit breakers; and

a connector adapted for releasable engagement with the interchangeable  
15 mounting arrangement, including a pair of conductors for establishing an electrical path  
between the power inlet and the pair of second single pole switches;

wherein engagement of the connector with the releasable engagement  
arrangement and interconnection of the pair of second single pole switches is operable  
to form a double pole switch adapted for interconnection with a double pole building  
20 electrical circuit, and wherein engagement of individual single pole circuit breakers with  
the interchangeable mounting arrangement and separation of the pair of second single  
pole switches is operable to form a pair of single pole switches, each of which is adapted  
for interconnection with a single pole building electrical circuit.

14. The transfer switch of claim 13, wherein the interchangeable  
mounting arrangement defines a mounting configuration which is compatible with a  
mounting configured defined by the connector, and wherein the connector mounting  
configuration is incompatible with a mounting arrangement associated with the single  
5 pole circuit breakers, such that the connector cannot be used in place of any of the  
plurality of single pole circuit breakers.

15. The transfer switch of claim 13, further comprising a main double  
pole circuit breaker connected downstream of the power inlet.

16. The transfer switch of claim 15, further comprising a branch double  
pole circuit breaker located between the main double pole circuit breaker and the pair of  
second single pole switches when the second single pole switches are interconnected  
together to form a double pole switch.

17. The transfer switch of claim 13, wherein the interchangeable  
mounting arrangement comprises socket structure with connector structure which are  
electrically interconnected with the power inlet and with each of the pair of second  
single pole switches, wherein the socket structure defines a pair of cavities.

18. The transfer switch of claim 17, wherein each cavity is adapted to  
receive a single pole circuit breaker engageable with the connector structure associated  
with the cavity, and wherein the connector comprises a pair of interconnected members  
adapted to be received within the cavities, wherein each member includes a conductor

- 5 engageable with the connector structure for establishing an electrical path between the power inlet and one of the pair of single pole switches.

19. A transfer switch adapted for interconnection between an auxiliary power source and an electrical load center associated with a building and interconnected in a series of building electrical circuits, comprising:

- 5 a power input for supplying power from the auxiliary power source;  
a double pole main circuit breaker interconnected downstream of the power inlet;  
a series of single pole switches and single pole circuit breakers located downstream of the double pole main breaker, wherein each single pole switch and single pole circuit breaker is interconnected with a single pole building electrical circuit; and  
10 a double pole switch and a double pole circuit breaker located downstream of the main circuit breaker, wherein the double pole switch and the double pole circuit breaker are adapted for interconnection with a double pole building electrical circuit.

20. The transfer switch of claim 19, wherein the double pole switch comprises a pair of single pole switches interconnected together.

21. The transfer switch of claim 20, wherein each of the pair of single pole switches includes a manually operable movable switch handle, wherein the switch handles are interconnected together by means of a connector which connects the switch handles together for movement in unison.

22. The transfer switch of claim 20, wherein the double pole circuit breaker is removable such that the pair of single pole switches are connectable directly to the double pole main circuit breaker, and further comprising a single pole circuit breaker located between the double pole main circuit breaker and each of the pair of  
5 single pole switches.

23. The transfer switch of claim 22, wherein the pair of single pole circuit breakers are releasably engaged with a socket-type mounting arrangement which includes a socket electrically interconnected with each of the pair of single pole switches, and further comprising a connector which is engaged with the socket-type  
5 mounting arrangement when the double pole circuit breaker is positioned between the double pole switch and the double pole main circuit breaker, wherein the connector

includes a pair of separate electrical conductors which cooperate with the socket-type mounting arrangement for establishing an electrical path between the double pole switch and the double pole circuit breaker.

24. A method of constructing a multi-circuit transfer switch adapted for interconnection between an auxiliary power source and an electrical load center associated with a building, comprising the steps of:

- providing a transfer switch housing with a series of circuit connections,
- 5 each of which includes a power supply selection switch; and
- interconnecting either a first double pole type circuit breaker with a pair of the power supply selection switches, or a single pole type circuit breaker with each of the pair of power supply selection switches;
- further including, when the double pole type circuit breaker is
- 10 interconnected with the pair of switches, the step of connecting together manually operated switch handles associated with the pair of power supply selection switches.

25. The method of claim 24, further comprising the step of providing the transfer switch housing with a power inlet and connecting a main double pole type circuit breaker downstream of the power inlet.

26. The method of claim 24, further comprising the step of interconnecting a mounting member having releasable engagement structure between the pair of power supply selection switches and a power inlet associated with the transfer switch housing.

- 27. The method of claim 26, wherein the step of interconnecting a single pole type circuit breaker with each of the pair of power supply selection switches is carried out by engaging a pair of individual single pole circuit breakers with the mounting member, and wherein the step of interconnecting the first double pole type
- 5 circuit breaker with the pair of power supply selection switches is carried out by electrically connecting the double pole type circuit breaker to the mounting member and engaging a dual conductor member with the mounting member, wherein the dual conductor member includes a pair of separate conductors which establish an electrical path between the first double pole type circuit breaker and the interconnected pair of
- 10 switches.

28. The method of claim 27, wherein the mounting member is in the form of a socket-type member, and wherein each of the power supply selection switches is interconnected with the socket-type mounting member, and wherein the dual conductor member has a configuration which matches the configuration of a pair of socket-type mounting members interconnected with the pair of power supply selection switches, and
- 5 wherein the configuration of the dual conductor member is incompatible with the remaining mounting members so as to prevent the conductor member from being engaged with any mounting members other than the mounting members interconnected with the pair of switches.